

A REVISION OF THE GENUS *TYLOPSIS* FIEBER  
(ORTHOPTERA : TETTIGONIIDAE)



BY

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## SYNOPSIS

The genus *Tylopsis* Fieber is fully revised and a key is given to the species. Seven specific synonyms are newly established and three new species are described.

## INTRODUCTION

*TYLOPSIS* Fieber is one of the most easily recognized genera of Phaneropterinae. Its species present more difficulty, however, and the description of a number of new African species during the past twenty years has made the identification of the Ethiopian members of the genus even more difficult. It is hoped that this revision, the first since Brunner's Monograph of 1878, will remedy this situation.

The genus was first given the name *Centrophorus* by Fischer de Waldheim in 1846; he based the name on some immature specimens, which he named *C. spinosus*. This generic name subsequently proved to be a homonym of a genus of fish described by Müller & Henle in 1837, and the specific name was a synonym of *Locusta lilifolia* Fabricius, 1793.

The genus *Tylopsis* was erected by Fieber in 1853 for the single species *Locusta lilifolia* Fabricius. This generic name later became involved in a controversy concerning the type-species of *Phaneroptera* Serville, 1831 (see Ragge, 1956: 206), of which one of the two originally included species was misidentified as *L. lilifolia* Fabricius. In 1944, however, *Tylopsis* Fieber was added to the Official List of Generic Names in Zoology, with *L. lilifolia* Fabricius as its type-species (Hemming, 1944).

Kirby, in his Catalogue of 1906, listed ten species of *Tylopsis* Fieber. Ten species are also recognized in the present revision, though five of these names are new to those listed by Kirby. Two of the names in Kirby's list, "*T. plana* (Walker)" and "*T. turbata* (Walker)" do not belong to *Tylopsis* Fieber (see below), and three further names have been found to be junior synonyms.

The species listed in Kirby's Catalogue as "*T. plana* (Walker)", based on a male holotype, may be placed for the time being in the genus *Symmetropleura* Brunner, 1878. This genus is based on a Neotropical type-species, *S. laevicauda* Brunner, 1878, and contains two further Neotropical species and two African species. It is quite possible that these African species will eventually be given separate generic status and that the present species, which is not closely related to them, will be considered to represent a third distinct genus, but it would not be appropriate to settle these questions here.

The species listed by Kirby as "*T. turbata* (Walker)", which is known only from the male holotype, belongs to the genus *Phlaurocentrum* Karsch, 1888. The holotype is unfortunately in very bad condition, and it is impossible to draw any conclusions regarding its affinity with the other species of *Phlaurocentrum* Karsch; the genitalia, which are of prime diagnostic importance, are not mentioned in the original description. The name is thus a nomen dubium, though it seems likely that it is synonymous with one of the nominal species of *Phlaurocentrum* Karsch at present recognized (see Ragge, 1962).

The nomenclatural adjustments that follow from the above considerations are set out below.

*Symmetropleura plana* (Walker, 1869) **comb. n.**

*Phaneroptera plana* Walker, 1869 : 339. Holotype ♂, SOUTH AFRICA : Natal (Brit. Mus. (Nat. Hist.)).

*Tylopsis plana* (Walker), Kirby, 1906 : 441.

*Phlaurocentrum turbatum* (Walker, 1869) **comb. n.**

*Phaneroptera turbata* Walker, 1869 : 340. Holotype ♂, "CONGO" (Brit. Mus. (Nat. Hist.)).

*Tylopsis turbata* (Walker), Kirby, 1906 : 441.

Access was gained to all the type-specimens that have not been lost or destroyed except for those of *T. dubia* Giglio-Tos, 1907 (in the Istituto e Museo di Zoologia della Università, Turin) and *T. coi* Jannone, 1936 (in the Istituto e Laboratorio di Entomologia Agraria, Portici). *T. dubia* Giglio-Tos, which is based on three syntypes from East Africa, cannot unfortunately be identified from the original description, though it is almost certainly one of the species recognized in this revision; I have therefore been forced to omit it. *T. coi* Jannone is discussed on p. 305.

For most of the species the material examined was rather extensive; where the data of this material are listed I have therefore abbreviated it for all the previously described species except *T. dispar* Sjöstedt and *T. gracilis* Chopard, by omitting the collectors' names, restricting the data information to the month (represented by a Roman numeral), and abbreviating names of provinces, where repeated, to their initial letters. The data of type-material are, however, given in full for every species.

Throughout this paper "Congo Republic" refers to the former Belgian colony. The author's usual conventions are observed (see Ragge, 1957 : 124).

## ACKNOWLEDGMENTS

My most sincere gratitude is due to the following specialists, who have been kind enough to send me type-specimens or other material from their respective institutions :—

Dr. A. de Barros Machado, Mr. P. Basilewsky, Dr. M. Beier, Mr. R. H. Carcasson, Dr. L. Chopard, Dr. J. de A. Fernandes, Dr. F. Keiser, Professor C. H. Lindroth, Mr. E. Morales Agacino, Mr. E. C. G. Pinhey, Mr. D. C. Rentz, Mr. W. Richter, Mr. R. Roy, Mr. E. Taylor, Professor E. Tortonese and Dr. G. van Son.

I am particularly grateful to the following workers, who have very kindly sent me specimens collected by them personally :—

Mr. & Mrs. R. W. Crosskey, Mr. A. E. King, Mr. M. Lamotte and Mr. J. A. Whellan.

I should also like to thank Mrs. P. M. Newman for help with the measurements.

## MATERIAL

In addition to the collection of *Tylopsis* Fieber in the British Museum (Natural History) material was lent by the sources listed below, through the courtesy of the specialists mentioned above (the abbreviations used where the material is listed in detail are inserted in parenthesis).

Museu do Dundo, Lunda, Angola (Mus. Dundo) ; Musée Royal de l'Afrique Centrale, Tervuren (Mus. Af. Cent.) ; Naturhistorisches Museum, Vienna (Nat. Mus. Vienna) ; Coryndon Museum, Nairobi (Coryndon Mus.) ; Muséum National d'Histoire Naturelle, Paris (Mus. Hist. Nat. Paris) ; Museu e Laboratório Zoológico e Antropológico, Lisbon (Mus. Zool. Lisbon) ; Naturhistorisches Museum, Basle (Nat. Mus. Basle) ; Zoologisches Museum of the Humboldt-Universität, Berlin (Zool. Mus. Berlin) ; Naturhistoriska Riksmuseum, Stockholm (Nat. Riksmus, Stockholm) ; South African Museum, Cape Town (S.A. Mus.) ; Universitetets Zoologiska Institution, Lund (Zool. Inst. Lund) ; Instituto Español de Entomología, Madrid (Inst. Esp. Ent.) ; National Museum of Southern Rhodesia, Bulawayo (Nat. Mus. S. R.) ; California Academy of Sciences, San Francisco (Cal. Acad. Sci.) ; Staatliches Museum für Naturkunde, Stuttgart (Staatl. Mus. Nat. Stuttgart) ; Institut Français d'Afrique Noire, Dakar, Senegal (I.F.A.N. Dakar) ; University Museum, Oxford (Univ. Mus. Oxford) ; Museo Civico di Storia Naturale, Genoa (Mus. Stor. Nat. Genoa) ; Transvaal Museum, Pretoria (Transvaal Mus.) ; Institut de Recherche Scientifique de Madagascar, Tananarive (Inst. Sci. Madag.).

***TYLOPSIS*** Fieber, 1853

*Centrophorus* Fischer de Waldheim, 1846 : 361. Type-species, by monotypy, *Centrophorus spinosus* Fischer de Waldheim, 1846. (Homonym of *Centrophorus* Müller & Henle, 1837.)  
*Tylopsis* Fieber, 1853 : 172. Type-species, by monotypy, *Locusta lilifolia* Fabricius, 1793.  
*Tylopsis* Fieber, Hemming, 1944 : 211. (Addition to Official List.)

DIAGNOSIS. ♂ ♀. Fastigium of vertex compressed, narrow, sulcate above. Pronotum without lateral carinae ; lateral lobes almost always distinctly longer than deep. Fore coxae with well-developed spine. Fore tibiae with slit-like tympanic opening on each side. Terminal

lateral lobes of femora often elongate. Hind femora unarmed. Abdominal tergites usually with median carina; posterior margins often produced into point.

DISCUSSION. *Tylopsis* Fieber is a remarkably well-defined genus, with no close relatives among other Phaneropterinae; in his Monograph of 1878 Brunner placed it in a group of its own, and it has acquired no synonyms since it was first established. Its facies is *Phaneroptera*-like (though usually more attenuate), but it is clearly separated from *Phaneroptera* Serville and allied genera by its slit-like tympanic apertures.

The male genitalia of *Tylopsis* Fieber are unusually uniform, all the known species having a subgenital plate of the same form and showing few striking differences in the structure of the cerci. The genus is in fact unusual among Tettigoniidae in that it is necessary to have specimens of both sexes in order to be certain of the identity of some of the species. Although most of the species have a very similar ovipositor, the female subgenital plate shows marked differences in shape, clearly characterizing a number of the species. In some species, however, this structure shows considerable geographical variation: this is especially true of *T. lilifolia* (Fabricius) (see p. 305) and *T. irregularis* Karsch (see p. 307). Among non-sexual characters the shape of the lateral pronotal lobes provides a useful character for separating the species, but is also sometimes subject to geographical variation.

DISTRIBUTION. *Tylopsis* Fieber occurs throughout the Ethiopian Region and extends northwards through the Mediterranean Region into the southernmost parts of European Russia.

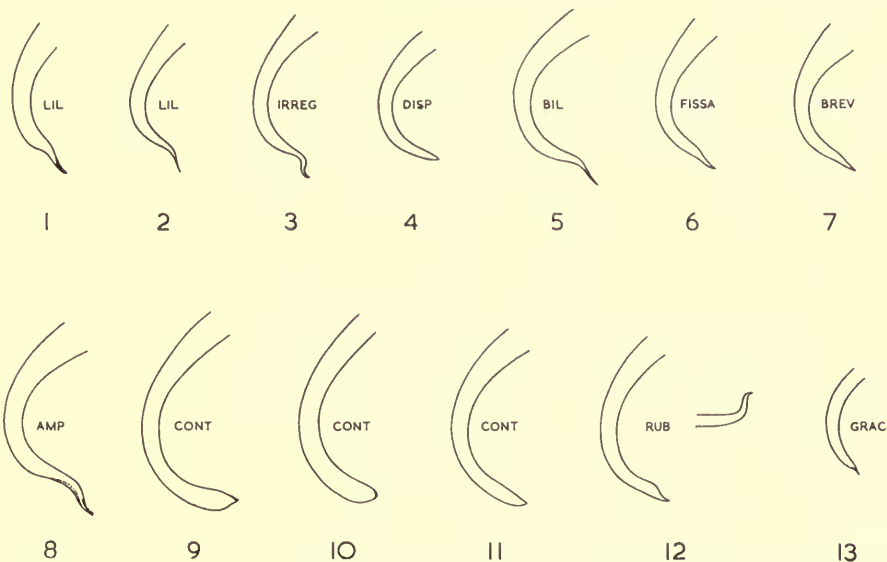
#### KEY TO THE SPECIES

As mentioned above it is desirable to have specimens of both sexes when identifying species of *Tylopsis* Fieber: in some species the males are more easily recognizable, in others the females, and in some a certain identification is difficult if either sex is not available.

In comparing the male cerci with Text-figs. 1-13 it is essential to view them from above and at right-angles to the principal plane of curvature. In determining the relative lengths of the fore wings and hind femora it is necessary to measure both these structures, and not to draw conclusions from the relative positions of the hind knees and the tips of the flexed fore wings.

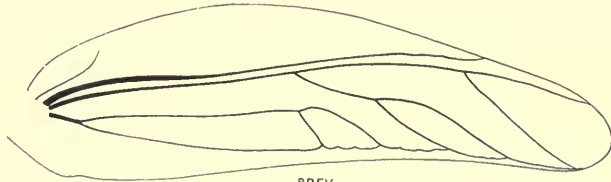
- |   |   |   |
|---|---|---|
| 1 | Pronotal disc dark brown or red-brown, contrasting with the paler lateral pronotal lobes . . . . .  | 2 |
| - | Pronotal disc similar in colour to the lateral pronotal lobes, or with the dark colouring restricted to a narrow median band . . . . .  | 4 |
| 2 | Fore wings less than 20 mm. in length. Male cerci as in Text-fig. 13  |   |
|   | <i>T. gracilis</i> Chopard (p. 321)   |   |
| - | Fore wings more than 20 mm. in length (except in the brachypterous form of <i>T. continua</i> (Walker)—see p. 317). Male cerci as in Text-figs. 9-12 . . . . .                                      | 3 |
| 3 | Male cerci as in Text-fig. 12, bent upwards near the apex. Basal plates of the ovipositor with a posteroventral lobe, as in Text-fig. 49  |   |
|   | <i>T. rubrescens</i> Kirby (p. 319)   |   |
| - | Male cerci as in Text-figs. 9-11, not or hardly bent upwards near the apex. Basal plates of the ovipositor without a posteroventral lobe, as in Text-figs. 47 and 48                                |   |
|   | <i>T. continua</i> (Walker) (p. 316)  |   |
| 4 | Fore wings comparatively short and broad, with a strongly convex anterior margin, as in Text-fig. 14. Dorsal spines of the hind tibiae mostly large and widely spaced, as in Text-fig. 16 . . . . . |   |
|   | <i>T. brevis</i> sp. n. (p. 314)  |   |

- Fore wings of normal shape, similar to Text-fig. 15. Dorsal spines of the hind tibiae of normal size, as in Text-fig. 17 . . . . . 5
- 5 Male . . . . . 6
- Female . . . . . 12
- 6 Cerci markedly undulate at the apex, as in Text-fig. 3. Lateral pronotal lobes shaped as in Text-figs. 20-22, with produced posteroventral angle
- T. irregularis* Karsch (p. 306)
- Cerci not as in Text-fig. 3, less or not at all undulate at the apex. Lateral pronotal lobes not shaped as in Text-figs. 20-22, or, if similar (Text-figs. 23 or 26), cerci as in Text-figs. 4 or 5 . . . . . 7
- 7 Lateral pronotal lobes shaped as in Text-figs. 18 and 19. Fore wings shorter than the hind femora. (S. Russia, Mediterranean Region and Arabia)
- T. lilifolia* (Fabricius) (p. 305)
- Lateral pronotal lobes not shaped as in Text-figs. 18 and 19. Fore wings almost always longer than the hind femora. (Africa south of the Sahara, and Madagascar) . . . . . 8
- 8 Cerci bent back near the apex, as in Text-figs. 5, 6 and 8 . . . . . 9
- Cerci not bent back near the apex, as in Text-figs. 4, 9, 10 and 11 . . . . . 11
- 9 Cerci as in Text-fig. 8, with a marked concavity on the outer side near the apex. Lateral pronotal lobes relatively deep, as in Text-fig. 30
- T. ampla* sp. n. (p. 315)
- Cerci as in Text-figs. 5 or 6, without a concavity near the apex. Lateral pronotal lobes less deep, as in Text-figs. 24-28 . . . . . 10
- 10 Cerci as in Text-fig. 5, when viewed from above, with a relatively fine point. Lateral pronotal lobes shaped as in Text-figs. 24-27. Left fore wing without a

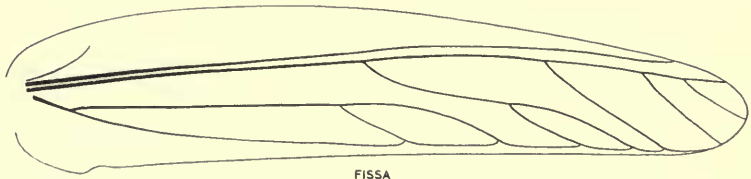


FIGS. 1-13. Dorsal view of the left male cercus of (1) *Tylopsis lilifolia* (Fabricius); (2) *T. lilifolia* (Fabricius) (deserticolous form); (3) *T. irregularis* Karsch; (4) *T. dispar* Sjöstedt; (5) *T. bilineolata* (Serville); (6) *T. fissa* sp. n.; (7) *T. brevis* sp. n.; (8) *T. ampla* sp. n.; (9) *T. continua* (Walker) (Northern Rhodesia); (10) *T. continua* (Walker) (Nyasaland); (11) *T. continua* (Walker) (Transvaal); (12) *T. rubescens* Kirby (with posterior view of apex); (13) *T. gracilis* Chopard. N.B. In comparing specimens with these figures it is essential that the cerci are viewed at right-angles to the principal plane of curvature.

- conspicuous dark spot on the stridulatory rib ( $Cu_2$ ), or, if with such a spot, from Madagascar . . . . . ***T. bilineolata*** (Serville) (p. 309)
- Cerci as in Text-fig. 6. when viewed from above, less finely pointed. Lateral pronotal lobes shaped as in Text-fig. 28. Left fore wing with a conspicuous small dark spot on the stridulatory rib ( $Cu_2$ ). (Not known from Madagascar) ***T. fissa*** sp. n. (p. 312)
- 11 Lateral pronotal lobes shaped as in Text-fig. 23, produced somewhat posteroventrally. Cerci as in Text-fig. 4, not swollen at the apex. (Known only from north of the  $10^\circ$  S. line of latitude) . . . . . ***T. dispar*** Sjöstedt (p. 309)
- Lateral pronotal lobes shaped as in Text-fig. 31, not produced posteroventrally. Cerci somewhat swollen at the apex, as in Text-fig. 9, in specimens from north of the  $10^\circ$  S. line of latitude ; otherwise sometimes as in Text-figs. 10 or 11 ***T. continua*** (Walker) (p. 316)
- 12 Subgenital plate as in Text-fig. 43, with a deep median incision at the apex ***T. fissa*** sp. n. (p. 312)
- Subgenital plate not as in Text-fig. 43, without a median incision at the apex . . . . . 13
- 13 Lateral pronotal lobes shaped as in Text-figs. 18 and 19. Fore wings shorter than the hind femora. (S. Russia, Mediterranean Region and Arabia) ***T. lilifolia*** (Fabricius) (p. 305)
- Lateral pronotal lobes not shaped as in Text-figs. 18 and 19. Fore wings almost always longer than the hind femora. (Africa south of the Sahara, and Madagascar) 14
- 14 Lateral pronotal lobes shaped as in Text-figs. 20-22, with produced posteroventral angle . . . . . 15

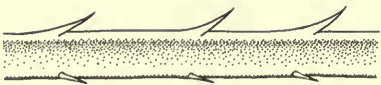


BREV  
14



FISSA  
15

FIGS. 14-15. The right male fore wing of (14) *Tylopsis brevis* sp. n. ; (15) *T. fissa* sp. n.



BREV  
16

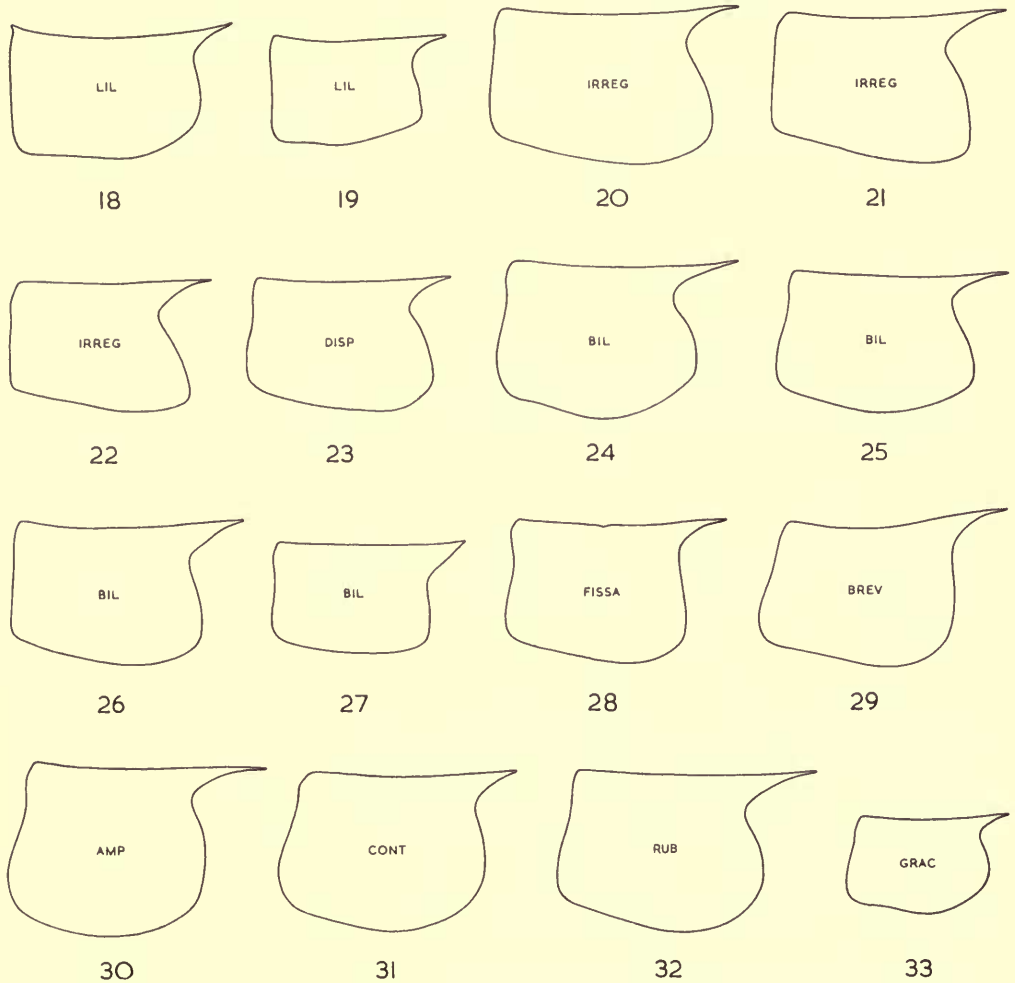


IRREG  
17

FIGS. 16-17. Lateral view of part of the left hind tibia of (16) *Tylopsis brevis* sp. n. ; (17) *T. irregularis* Karsch.

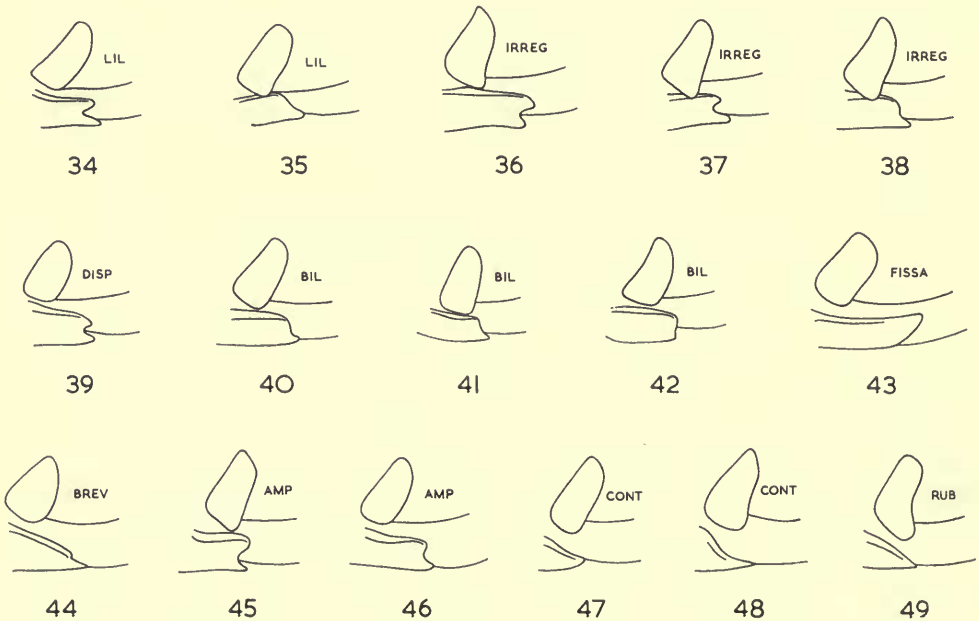


- Lateral pronotal lobes not as in Text-figs. 20-22 . . . . . 18
- 15 Subgenital plate with well-developed lateral lobes, as in Text-figs. 36, 37 or 39 . . . . . 16
- Subgenital plate as in Text-figs. 38, 40, 41 or 42, without well-developed lateral lobes . . . . . 17
- 16 Fore wings more than 28 mm. in length. (West Africa) *T. irregularis* Karsch (p. 306)
- Fore wings less than 28 mm. in length. (East Africa) . . . *T. dispar* Sjöstedt (p. 309)



FIGS. 18-33. Lateral view of the pronotum of (18) *Tylopsis lilifolia* (Fabricius); (19) *T. lilifolia* (Fabricius) (deserticolous form); (20) *T. irregularis* Karsch (Guinea); (21) *T. irregularis* Karsch (Nigeria); (22) *T. irregularis* Karsch (Tanganyika); (23) *T. dispar* Sjöstedt; (24) *T. bilineolata* (Serville) (Northern Rhodesia); (25) *T. bilineolata* (Serville) (Angola); (26) *T. bilineolata* (Serville) (large Madagascan form); (27) *T. bilineolata* (Serville) (small Madagascan form); (28) *T. fissa* sp. n.; (29) *T. brevis* sp. n.; (30) *T. ampla* sp. n.; (31) *T. continua* (Walker); (32) *T. rubescens* Kirby; (33) *T. gracilis* Chopard.

- 17 Lateral pronotal lobes shaped as in Text-figs. 21 or 22. (Not known from South Africa or Madagascar) . . . . . *T. irregularis* Karsch (p. 306)  
 - Lateral pronotal lobes not shaped as in Text-figs. 21 or 22, or, if somewhat similar (Text-fig. 26), from South Africa or Madagascar . . . . . *T. bilineolata* (Serville) (p. 309)
- 18 Subgenital plate simply triangular, as in Text-figs. 47 and 48  
 . . . . . *T. continua* (Walker) (p. 316)  
 - Subgenital plate not simply triangular, as in Text-figs. 39-42, 45 and 46 . . . . . 19
- 19 Subgenital plate with small well-developed lateral lobes, as in Text-fig. 39  
 . . . . . *T. dispar* Sjöstedt (p. 309)  
 - Subgenital plate not as in Text-fig. 39; lateral lobes, if present, large and broad . . . . . 20
- 20 Subgenital plate with lateral lobes, as in Text-figs. 45 and 46. Lateral pronotal lobes relatively deep, as in Text-fig. 30 . . . . . *T. ampla* sp. n. (p. 315)  
 - Subgenital plate without lateral lobes, as in Text-figs. 40-42. Lateral pronotal lobes less deep, as in Text-figs. 24-27 . . . . . *T. bilineolata* (Serville) (p. 309)



FIGS. 34-49. Lateral view of the subgenital plate and basal region of the ovipositor of (34) *Tylopsis lilifolia* (Fabricius); (35) *T. lilifolia* (Fabricius) (deserticolous form); (36) *T. irregularis* Karsch (Mali); (37) *T. irregularis* Karsch (Uganda: "Karamoja"); (38) *T. irregularis* Karsch (Uganda: Agaya Lango); (39) *T. dispar* Sjöstedt; (40) *T. bilineolata* (Serville) (Tanganyika); (41) *T. bilineolata* (Serville) (Southern Rhodesia); (42) *T. bilineolata* (Serville) (Transvaal); (43) *T. fissa* sp. n.; (44) *T. brevis* sp. n.; (45) *T. ampla* sp. n. (Angola); (46) *T. ampla* sp. n. (Northern Rhodesia); (47) *T. continua* (Walker) (Southern Rhodesia); (48) *T. continua* (Walker) (Northern Rhodesia); (49) *T. rubescens* Kirby.

## DESCRIPTIONS OF THE SPECIES

1. *Tylopsis lilifolia* (Fabricius, 1793)  
(Text-figs. 1, 2, 18, 19, 34, 35)

[*Locusta thymifolia* Fabricius, Petagna, 1792 : 313. (Misidentification.)]

*Locusta lilifolia* Fabricius, 1793 : 36. Type locality : ITALY. Type-material lost.

*Locusta gracilis* Germar, 1817 : 251. Holotype ♀, YUGOSLAVIA : Zadar (*Germar*) (lost).

*Locusta lilifolia* Rambur, 1838 : 44. (Unjustified emendation.)

*Tylopsis lilifolia* (Fabricius), Fieber, 1853 : 173.

*Phaneroptera praeusta* Fischer de Waldheim, 1846 : 142. Holotype ♀, U.S.S.R. : Azerbaijan, Kirovabad (*Kolenati*) (lost).

*Centrophorus spinosus* Fischer de Waldheim, 1846 : 362. Unknown number of nymphal syntypes of both sexes, U.S.S.R. : Crimea (*Motschulsky*) (lost).

*Phaneroptera margineguttata* Serville, 1839 : 422. 1 ♂ syntype, SARDINIA (*Géné*) ; 1 ♂ syntype, SICILY (*Latreille*) (both lost).

? *Tylopsis coi* Jannone, 1936 : 147. Holotype ♂, DODECANESE : Kos, Linopoti Marsh, 10.ix.1934 (*Jannone*) (Istituto e Laboratorio di Entomologia Agraria, Portici). (See below.)

*Locusta lilifolia* Fabricius, Hemming, 1954 : 644. (Addition to Official List.)

DIAGNOSIS. ♂ ♀. Lateral pronotal lobes as in Text-figs. 18 and 19. Male cerci as in Text-figs. 1 and 2. Female subgenital plate with well-developed lateral lobes, as in Text-fig. 34, or simply triangular, as in Text-fig. 35.

## MEASUREMENTS.

	MALES		FEMALES	
Total length	(20) : 21.1-38.7, mean 30.83	(20) : 24.2-37.9, mean 33.26		
Median length of pronotum	(20) : 2.5-4.3, mean 3.49	(20) : 3.3-4.2, mean 3.72		
Length of hind femur	(20) : 20.0-26.9, mean 22.90	(20) : 22.4-28.0, mean 24.43		
Length of fore wing	(20) : 15.2-24.9, mean 19.68	(20) : 18.6-24.1, mean 21.28		
Length of ovipositor		(20) : 4.3-5.3, mean 4.94		

DISCUSSION. This is the only species of the genus in southern Europe and the Levant. In parts of North Africa and Arabia, however, it overlaps in range with *T. irregularis* Karsch ; it may be readily distinguished from that species by the shape of the lateral pronotal lobes, which lack a produced posteroventral angle.

The material I have examined from Algeria, Libya, southern Jordan and the Arabian Peninsula differs in several respects from material from the remaining parts of the range. The insects are usually smaller, the male cerci are more attenuate at the tip (Text-fig. 2), and the lateral lobes normally characteristic of the female subgenital plate are completely lacking (Text-fig. 35) ; also, the lateral pronotal lobes tend to be more angular (Text-fig. 19). When further material becomes available it will doubtless be advisable to regard this form as a distinct subspecies ; it may even prove to be specifically distinct from *T. lilifolia* (Fabricius). The material at present available is, however, quite inadequate for a definite conclusion to be drawn, and for the time being it is better to regard the specimens from these southerly parts of the range as belonging to a deserticolous form of *T. lilifolia* (Fabricius).

The type-material of *T. coi* Jannone was unfortunately not available for study,

but it seems very probable from the well illustrated original description that this name is a synonym of *T. lilifolia* (Fabricius). This cannot be established with certainty, however, in the absence of the holotype.

**MATERIAL EXAMINED.** A large quantity of material of this species was available for study and, as it is a comparatively well-known insect, exact locality data are given below only for material from countries through which the boundary of its range passes or in which the extent of its distribution is very poorly known. The remaining countries and islands are listed without further details (see also general remarks on p. 298).

PORTUGAL ; SPAIN ; FRANCE : Haute-Garonne, 15 Km. N. of Toulouse, Beauxelle, 1 ♀, viii ; Pyrénées-Orientales, nr. Banyuls-sur-Mer, 4 ♂, 8 ♀, ix ; P.-O., nr. Le Perthus, 1 ♀, ix ; P.-O., Vernet les Bains, 3 ♂, 2 ♀, viii ; Hérault, Palavas les Flots, 1 ♂, viii ; Aude, Narbonne-plage, 1 ♂, viii ; Bouches-du-Rhône, Petit Camargue, Les Stes. Maries, 1 ♀, viii ; Arles, Fourques, 1 ♀, ix ; Provence, Croix Valmer, 3 ♂, 2 ♀, viii ; P., St. Tropez, 1 ♂, viii ; Var, Ste. Maxime distr., 1 ♂, 1 ♀, viii-ix ; V., La St. Baume, 1 ♂, 1 ♀, ix ; Alpes-Maritimes, nr. Villefranche-sur-Mer, 4 ♂, ix ; A.-M., Cagnes, 1 ♂, viii-ix ; A.-M., Biot, c. 800 ft., 9 ♂, 3 ♀, viii ; CORSICA ; ITALY : Liguria, Portofino, Vetta, 450 m., 1 ♀, ix ; L., Chiavari, 1 ♂, ix ; Rome, 2 ♂, 4 ♀ ; Apuan Alps, Camalore Lombrici, 100 m., 1 ♂, 3 ♀, ix ; Apulia, Leuca, 40 m., 1 ♀, ix ; Emilia, Classe de Ravenna, 1 ♂, viii ; Basilicata, Venosa, 420 m., 2 ♀, ix ; Molveno, 1 ♀, viii ; Taranto, 1 ♀ ; YUGOSLAVIA ; GREECE ; TURKEY ; CYPRUS ; SYRIA : Jisr Banat, Yacoub, 2 ♀, vii ; Jebel Mazar, Lake, 1 ♂, 1 ♀, vii ; Hameh, 1 ♂, vi ; Samakh, 1 ♀, v ; LEBANON : nr. Baalbek, 1 ♂, vii ; Amioun, 1 ♂, 1 ♀, viii ; Wadi el Harir, 2 ♂, vii ; ISRAEL : Haifa, 1 ♂, 1 ♀, vii ; Nazareth, 1,200 ft., 1 ♀, vi ; Beisan, 2 ♀, vi ; JORDAN : Kukum, Tul Karem, 2 ♂, vi ; Samaria, Marj Samour, 1 ♂, vi ; 23 Km. W. of Amman, nr. El Salt, 3 ♂, 4 ♀, vi ; Wadi Zerka, Jerash Rd., 1 ♀, vi ; Damiya, 280 m., 1 ♀, iv ; EGYPT : ———, 1 ♀ ; Tul Keram, 1 ♂, x.

Deserticolous form (see p. 305). JORDAN : Petra, 2 ♀, vi ; ARABIA : El Kubar, 2 ♂ ; LIBYA : Cyrenaica, Slonta, Jebel Akhdar, 1 ♂, 1 ♀, vii ; ALGERIA : Ain Sefra, 1 ♂ (Nat. Mus. Vienna).

In Brit. Mus. (Nat. Hist.) unless otherwise stated.

**DISTRIBUTION.** The range of this species covers most of the Mediterranean Region and extends northwards into the southernmost parts of European Russia.

## 2. *Tylopsis irregularis* Karsch, 1893 (Text-figs. 3, 17, 20-22, 36-38)

*Tylopsis irregularis* Karsch, 1893 : 130. Lectotype ♂, TOGO : Bismarckburg (Zool. Mus. Berlin) [examined].

*Tylopsis perpulchra* Burr, 1900 : 43. Holotype ♂, SOMALI REPUBLIC : Whardi Datal (Univ. Mus. Oxford) [examined]. **Syn. n.**

*Tylopsis obscuripes* Chopard, 1945 : 166. Lectotype ♂, CAMEROUN : Bambouto Mtns. (Mus. Hist. Nat. Paris) [examined]. **Syn. n.**

*Tylopsis villiersi* Chopard, 150 : 133. Lectotype ♂, NIGER : Agadès (Mus. Hist. Nat. Paris) [examined]. **Syn. n.**

*Tylopsis lamottei* Chopard, 1954 : 42. Lectotype ♂, GUINEA : Nimba, Serengbara (Mus. Hist. Nat. Paris) [examined]. **Syn. n.**

Diagnosis. ♂ ♀. Lateral pronotal lobes with produced posteroventral angle, as in Text-figs. 20-22. Male cerci markedly undulate at apex, as in Text-fig. 3. Female subgenital plate with or without lateral lobes, as in Text-figs. 36-38.

MEASUREMENTS.

	MALES		FEMALES	
Total length	(20) :	38.7-47.6, mean 43.40	(20) :	36.8-48.7, mean 43.41
Median length of pronotum	(20) :	3.1- 4.1, mean 3.67	(20) :	3.1- 4.2, mean 3.65
Length of hind femur	(20) :	22.4-29.3, mean 25.48	(20) :	23.1-27.6, mean 25.66
Length of fore wing	(20) :	25.7-31.7, mean 28.69	(20) :	24.7-32.7, mean 28.97
Length of ovipositor			(20) :	4.6- 6.8, mean 5.22

DISCUSSION. The shape of the lateral pronotal lobes and the strongly undulate tips of the male cerci enable this species to be quite easily distinguished from the other members of the genus. It is by far the most common and widespread species of *Tylopsis* Fieber in West Africa, and seems in fact to be the only species in much of this region.

All the females examined from west of the Adamawa Highlands had subgenital plates with well-developed lateral lobes (Text-figs. 36 and 37). In the East African material, however, these lobes were almost always lacking or at the most very poorly developed ; the Congolese material showed a mixture of the two types, and this was also true of the Arabian females. The characteristic shape of the lateral pronotal lobes and of the male cerci is fairly constant throughout the range. It is impossible to be certain from the material at present available whether this difference in the shape of the female subgenital plate (which parallels the similar difference shown by *T. lilifolia* (Fabricius) (see p. 305)) is due to geographical variation or polymorphism. The overlap in range of the two types that seems to occur in the Congo Republic, in Uganda (a female from "Karamoja" is of the West African type) and in Arabia suggests polymorphism, with a pronounced tendency towards allopatry by the two polymorphs, but this question cannot be settled definitely until more material is available.

Examination of the type-specimens of *T. perpulchra* Burr, *T. obscuripes* Chopard, *T. villiersi* Chopard and *T. lamottei* Chopard has shown that they are conspecific with the type-material of *T. irregularis* Karsch.

I have selected and labelled a male lectotype from each of the following type-series :—

- T. irregularis* Karsch, 5 ♂ and 4 ♀ syntypes
- T. obscuripes* Chopard, 1 ♂ and 1 ♀ syntypes
- T. villiersi* Chopard, 1 ♂ and 1 ♀ syntypes
- T. lamottei* Chopard, 1 ♂ and 1 ♀ syntypes.

MATERIAL EXAMINED.

Lectotype. TOGO : Bismarckburg, ♂, i.xi-15.xii.1890 (*Büttner*) (Zool. Mus. Berlin).

Paralectotypes. TOGO : Bismarckburg, 1 ♂, 1 ♀ (*Büttner*) (Zool. Mus. Berlin) ; Bismarckburg, 3 ♂, 3 ♀, i.1891 (*Büttner*) (Zool. Mus. Berlin).

MOROCCO : Od. Cherrat, 2 ♂, ix ; SENEGAL : Richard Toll, 1 ♀, ix (I.F.A.N. Dakar) ; MALI : Middle Niger, Diafarabe, 1 ♂, ix ; Dioura, 1 ♀, x ; GUINEA : Nimba, Serengbara, 1 ♂, ii-vi.1942 (*Lamotte*) (Mus. Hist. Nat. Paris) (lectotype of *T. lamottei* Chopard) ; Nimba, Keoulenta, 1 ♀, ii-iv.1942 (*Lamotte*) (Mus. Hist. Nat. Paris) (paralectotype of *T. lamottei* Chopard) ; Nimba, Ziéla, 7 ♂, 8 ♀, xii-v (Mus. Hist. Nat. Paris) ; Nimba, 2 ♂, 1 ♀, iii (Mus. Hist. Nat. Paris) ; Friguiagbé, nr. Kindia, 4 ♂ (Mus. Hist. Nat. Paris) ; SIERRA LEONE : Njala, 2 ♀, v-x ; LIBERIA : ———, 1 ♂ ; IVORY COAST : Dimbokro ["Dimbroko"], 1 ♂, 1 ♀ (Inst. Esp. Ent.) ; Lamto, Toumodi, 1 ♂, 4 ♀, iii-x ; GHANA : between Takoradi and Axim, 1 ♀, vii-ix ; TOGO : Bismarckburg, 1 ♂, 2 ♀, i (Nat. Mus. Vienna) ; ———, 1 ♂ (Inst. Esp. Ent.) ; DAHOMEY : Porto-Novu, 1 ♂, 1 ♀ (Mus. Hist. Nat. Paris) ; Parakou and Nikki, 1 ♂ (Mus. Hist. Nat. Paris) ; NIGER : Agadès, 1 ♂, 1 ♀, 1947 (*Chopard & Villiers*) (Mus. Hist. Nat. Paris) (lectotype and paralectotype of *T. villiersi* Chopard) ; NIGERIA : Azare, 4 ♂, 3 ♀, x-vi ; Gombe, Matyoro Lakes, 1 ♀, i ; Calabar, 1 ♂, ii ; Ibadan, 1 ♂, 1 ♀, ii-iii ; Zaria, 1 ♂, xi ; nr. Lagos, 1 ♀, i ; Niger Province, Abuja, 1 ♂, 1 ♀, vi-vii ; N.P., Minna, 2 ♀, ix-xi ; N.P., Diko, 2 ♂, 2 ♀, xii-i ; Benue Province, Abayol, nr. Gboko, 1 ♀, i ; B.P., Takum, 1 ♀, i ; Kabba Province, Lokoja, 1 ♂, 1 ♀, ix-v ; Kabba, 1 ♂, 4 ♀, ii ; Bauchi Province, Udubo, 1 ♀, xii-i ; CHAD : N'Gouri, Kanem distr., 1 ♂, ix (Mus. Af. Cent.) ; South Dar-Banda, Krebedje, Fort Sibut, 1 ♂, xi (Mus. Hist. Nat. Paris) ; Baguirmi, Tcheckna, 1 ♀, viii (Mus. Hist. Nat. Paris) ; CAMEROUN : Bambouto Mtns., 2,300-2,500 m., 1 ♂, vii.1939 (*Lepesme, Paulian & Villiers*) (Mus. Hist. Nat. Paris) (lectotype of *T. obscuripes* Chopard) ; Bambouto Mtns., 2,000 m., 1 ♀, vii.1939 (*Lepesme, Paulian & Villiers*) (Mus. Hist. Nat. Paris) (paralectotype of *T. obscuripes* Chopard) ; CONGO (ex French) : Grand Lahou, 1 ♂ (Mus. Hist. Nat. Paris) ; CONGO REPUBLIC : Kivu, 1 ♂ (Mus. Af. Cent.) ; K., Buserengenyé (Rutshuru), 1 ♀, ix (Mus. Af. Cent.) ; Thysville, 1 ♂ (Mus. Af. Cent.) ; Katanga, 1 ♂ (Mus. Af. Cent.) ; Ubangi, Jacoma, 1 ♂, 1 ♀ (Mus. Af. Cent.) ; Ituri, Aru, 1 ♀ (Mus. Af. Cent.) ; Kibali-Ituri, Domu, 1 ♀, ii-iii (Mus. Af. Cent.) ; K.-I., Aru, 1 ♀ (Mus. Af. Cent.) ; Brabanta (Basongo), 1 ♂, iv-v (Mus. Af. Cent.) ; Garamba National Park, 11 ♂, 7 ♀, xi-iii (Inst. Parcs Nat. Brussels) ; RUANDA : Kinazi, Terr. Nyanza, 1,600 m., 1 ♂, 2 ♀, i (Mus. Af. Cent.) ; Astrida, 3 ♀, vii-x (Mus. Af. Cent.) ; ARABIA : Shaira, 19° 27' N., 41° 6' E., 1 ♂, 1 ♀, i ; Mecca, 2 ♂, iii ; Lith, 1 ♀, ii ; Hejaz, Jidda, 1 ♀, ii ; ETHIOPIA : Ogaden, Wardere, 1 ♂, xii ; Hawash R., W. of Mt. Zaqúala, c. 6,000 ft., 2 ♀, xi ; Jimma, 7° 39' N., 36° 49' E., 1,779 m., 2 ♂, 1 ♀, i (Staatl. Mus. Nat. Stuttgart) ; ———, 1 ♀ (Mus. Hist. Nat. Paris) ; Eritrea, 1 ♂ (Nat. Mus. Vienna) ; SOMALI REPUBLIC : Whardi Datal, 1 ♂, 26.vii.1895 (*Peel*) (Univ. Mus. Oxford) (holotype of *T. perpulchra* Burr) ; UGANDA : Karamoja, 1 ♀, xi ; Lango, Aduku, 1 ♂, vii ; Butiaba, 1 ♂, ix ; Kepeka, 4 ♂, vii-x ; Bulemezi, Nakasongola, 2 ♂, xi ; Wakyato, 1 ♂, vii ; Agaya Lango, 1 ♂, 2 ♀, xi ; Lwengo, Buddu, 1 ♂, vii ; L., Masaka, 1 ♂, 1 ♀, v ; Buruli, 1 ♂, vii ; Koki, Lwanda, 1 ♀, i ; Bugwere, 1 ♀, x ; Lango, Amugo, 1 ♀, vii ; Tororo Hills, 1 ♂, 1 ♀, v ; 27 miles N. of Murchison

Falls, 1,050 m., 1 ♂, viii (Cal. Acad. Sci.); KENYA: Nairobi, 3 ♂, 1 ♀, xi-vi; Chyulu Hills, 1 ♀, vii; Samburu, 2 ♀; TANGANYIKA: Malagarasi, 1 ♂, viii; north-west, 1 ♀ (Nat. Mus. Vienna); ANGOLA: Morro de Pundo, 1 ♀, v; Amboim, 1 ♀, iv; SOUTH WEST AFRICA: Damaraland, 1 ♀ (Nat. Mus. Vienna).

In Brit. Mus. (Nat. Hist.) unless otherwise stated.

DISTRIBUTION. This species is distributed throughout tropical Africa, and extends northwards into Morocco and Arabia.

### 3. *Tylopsis dispar* Sjöstedt, 1909 (Text-figs. 4, 23, 39)

*Tylopsis dispar* Sjöstedt, 1909: 135. Lectotype ♂, TANGANYIKA: Mt. Meru, Ngare na nyuki (Nat. Riksmus. Stockholm) [examined].

DIAGNOSIS. ♂ ♀. Lateral pronotal lobes as in Text-fig. 23. Male cerci as in Text-fig. 4, not undulate at apex when viewed from above. Female subgenital plate with well-developed lateral lobes, as in Text-fig. 39.

#### MEASUREMENTS.

	MALES	FEMALES
Total length	(6): 37.4-39.8, mean 39.05	(3): 36.8-39.4, mean 38.50
Median length of pronotum	(6): 3.2-3.4, mean 3.29	(3): 3.0-3.2, mean 3.11
Length of hind femur	(6): 21.1-23.4, mean 22.03	(3): 20.5-26.1, mean 21.97
Length of fore wing	(6): 24.2-26.0, mean 25.15	(3): 25.1-26.1, mean 25.70
Length of ovipositor		(3): 5.1-5.2, mean 5.14

DISCUSSION. The male of this species may be easily recognized by the cerci, which are not undulate when viewed from above, not bent back near the apex, and not finely pointed. The female may be distinguished from the other East African species of the genus by the shape of the subgenital plate and the lateral pronotal lobes.

I have selected and labelled a male lectotype from the nine male and six female syntypes of this species. All these syntypes are from the lectotype locality except for one male with the following data—TANGANYIKA: Kilimanjaro, Kibonoto, xii.1905 (*Sjöstedt*).

#### MATERIAL EXAMINED.

Lectotype. TANGANYIKA: Mt. Meru, Ngare na nyuki, ♂, i.1906 (*Sjöstedt*) (Nat. Riksmus. Stockholm).

Paralectotypes. TANGANYIKA: Mt. Meru, Ngare na nyuki, 3 ♂, 3 ♀, x-xii.1905 (*Sjöstedt*) (1 ♂, 1 ♀ in Brit. Mus. (Nat. Hist.); remainder in Nat. Riksmus. Stockholm).

KENYA: Mtito Andei, nr. Lushoto, 1 ♂, 10.ii.1955 (*Haskell*) (Brit. Mus. (Nat. Hist.)); Bura, 1 ♂, iii.1912 (*Alluaud & Jeannel*) (Inst. Esp. Ent.).

### 4. *Tylopsis bilineolata* (Serville, 1839) (Text-figs. 5, 24-27, 40-42)

*Phaneroptera bilineolata* Serville, 1839: 419. Holotype ♂, SOUTH AFRICA: Cape of Good Hope (lost).

*Phaneroptera attenuata* Walker, 1869 : 338. Holotype ♀, SOUTH AFRICA (Brit. Mus. (Nat. Hist.)) [examined].

*Tylopsis marginata* Brunner, 1891 : 113. Holotype ♀, SOUTH AFRICA : Durban (Nat. Mus. Vienna) [examined].

DIAGNOSIS. ♂ ♀. Lateral pronotal lobes as in Text-figs. 24-27. Male cerci as in Text-fig. 5, apex reflexed and finely pointed when viewed from above. Female subgenital plate as in Text-figs. 40-42, with median point or truncate, sometimes showing slight indication of lateral lobes.

#### MEASUREMENTS.

	MALES		FEMALES	
Total length	(20) : 38.3-48.8, mean 43.88	(20) : 40.2-52.0, mean 45.82		
Median length of pronotum	(20) : 3.5-4.1, mean 3.76	(20) : 3.4-4.3, mean 3.74		
Length of hind femur	(20) : 23.7-29.5, mean 26.28	(20) : 23.0-29.3, mean 26.80		
Length of fore wing	(20) : 24.6-32.1, mean 29.00	(20) : 25.8-35.6, mean 30.48		
Length of ovipositor		(20) : 4.9-6.0, mean 5.28		
Small Madagascan form (see below)				
	MALES		FEMALES	
Total length	(10) : 30.6-34.4, mean 32.08	(10) : 27.7-35.4, mean 31.21		
Median length of pronotum	(10) : 3.0-3.7, mean 3.29	(10) : 3.0-3.7, mean 3.35		
Length of hind femur	(10) : 18.0-23.0, mean 19.60	(10) : 17.3-23.3, mean 19.74		
Length of fore wing	(10) : 19.1-21.3, mean 20.07	(10) : 17.8-22.3, mean 19.99		
Length of ovipositor		(10) : 4.2-4.8, mean 4.52		

DISCUSSION. The shape of the male cerci of this species is approached only by that of the deserticolous form of *T. lilifolia* (Fabricius) (p. 305), which, however, does not occur in Africa south of the Sahara. The subgenital plate of the female could be confused only with that of *T. irregularis* Karsch, from which *T. bilineolata* (Serville) may be distinguished in Tanganyika, where the ranges of the two species probably overlap, by the shape of the lateral pronotal lobes.

The large amount of Madagascan material that was available for this study has been rather difficult to assess taxonomically. It falls into two fairly distinct groups : a large form (total length about 40-45 mm.) and a small form (total length about 30 mm.) ; a few specimens are intermediate in size. Apart from the size difference these two forms resemble each other closely ; the male cerci and female subgenital plate are very similar, and it is only the pronotum that shows an appreciable difference (see Text-figs. 26 and 27). Taken together and compared with the species of *Tylopsis* Fieber that occur on the adjacent part of the African mainland, the two forms agree very well with *T. bilineolata* (Serville) in the shape of the male cerci and female subgenital plate (and, in the case of the large form, in size), though the pronotum of both large and small forms shows some difference (see Text-figs. 24-27). I have therefore chosen to regard the Madagascan material as consisting of slightly modified forms of the present species ; the large and small forms may have resulted from two immigrations by the African population of *T. bilineolata* (Serville) at widely separated times.

#### MATERIAL EXAMINED.

CONGO REPUBLIC : Sankuru, Gandajika, 4 ♀, vii-x (Mus. Af. Cent.) ; Gandajika, 4 ♀, x (Mus. Af. Cent.) ; Katanga, Lubumbashi, 1 ♀ (Mus. Af. Cent.) ; K.,



Kansenia, 4 ♂, ix (Mus. Af. Cent.) ; K., Kafakumba, 1 ♀, ix (Mus. Af. Cent.) ; K., Kolwezi, 1 ♂, xi (Mus. Af. Cent.) ; K., 1 ♀ (Mus. Af. Cent.) ; K., 1 ♀, xi-xii ; Elisabethville, 1 ♀, x (Mus. Af. Cent.) ; Kabinda, 1 ♀ (Mus. Af. Cent.) ; ANGOLA : Lunda, Dundo, 1 ♂, vii (Mus. Dundo) ; 40 Km. S.S.E. of Dundo, 2 ♀, vii (Mus. Dundo) ; Caluango, R. Caquele, 1 ♂, 1 ♀, ix (Mus. Dundo) ; Caluango, between R. Caquele and R. Luange, 1 ♀, ix (Mus. Dundo) ; Cuangula Post, Zovo, Mabete, banks of R. Combonde, 8° 03' S., 18° 13' E., 750 m., 1 ♀, vii (Mus. Dundo) ; Cuilo Post, Xá-Ua, nr. R. Luita, 8° 02' S., 19° 25' E., 1,000-1,050 m., 1 ♀, vii (Mus. Dundo) ; Luchase distr., R. Quangu, 5,000 ft., 1 ♀, x ; L. distr., R. Quangu, 2 ♂, 1 ♀, x ; Moxico distr., R. Lungue Bungu, 3 ♂, x ; M. distr., valley of R. Mu-Simój, 3 ♂, 3 ♀, x ; M. distr., upper Mu-Simój R., 5 ♂, ix ; Bihe distr., Cohemba, 1,330 m., 2 ♀, viii ; Quanza, 1 ♂, ix (Inst. Esp. Ent.) ; TANGANYIKA : Bukoba, Bugese, 1 ♂, vi ; Ufipa, Sambawanga, 2 ♀, xi ; Tukuyu, 5,084 ft., 1 ♂, 1 ♀, ix ; Matengo Highlands, W.S.W. of Songea, Mbinga, 1 ♀, xi (Nat. Mus. Vienna) ; NORTHERN RHODESIA : Lusaka, 2 ♂, 2 ♀, x-xii ; 6 miles E. of Lusaka, 1 ♀, ix-xi ; Chisinga Plateau, Kalungwisi distr., 1,500 ft., 1 ♂, ix (Univ. Mus. Oxford) ; SOUTHERN RHODESIA : Gazaland, Mahakata R., 5,000 ft., 2 ♂, ix-x (Univ. Mus. Oxford) ; G., Mt. Chirinda, 1 ♂, xi-xii ; Mashonaland, Salisbury, 2 ♀, xii ; Salisbury, Hatfield, 1 ♀, x ; Salisbury, 1 ♀, xi (S. A. Mus.) ; Turk Mine, 3 ♀, x (Nat. Mus. S. R.) ; Inyanga, 1 ♂, i (Nat. Mus. S. R.) ; Vumba Mtns., 1 ♂, xi (Transvaal Mus.) ; NYASALAND : Zomba, 1 ♀ ; MOZAMBIQUE : Revoué Valley, nr. Andrada, 1 ♂, x (Mus. Hist. Nat. Paris) ; SOUTH AFRICA : ———, 1 ♀ (holotype of *Phaneroptera attenuata* Walker) ; Durban, 1 ♀ (*Staudinger*) (Nat. Mus. Vienna) (holotype of *Tylopsis marginata* Brunner) ; Cape Province, Fish Hoek Valley, 1 ♂, xi-iii ; Barberton, 3 ♀ ; Somerset West, 1 ♀ (S.A. Mus.) ; Cape Town, 1 ♂, iv (Transvaal Mus.) ; Grootdraai, Olifants R., 1 ♀, x (Transvaal Mus.) ; Rustenburg, 1 ♀, x (Transvaal Mus.) ; Johannesburg, 1 ♀, x ; MADAGASCAR : Toalala, Reserve VIII, 1 ♂ (Inst. Sci. Madag.) ; Ampijoroa, Ankarafantsika, 170 m., 1 ♀, i (Inst. Sci. Madag.) ; Ampijoroa, Tsaramandroso, 2 ♀ (Inst. Sci. Madag.) ; Ambohimanakana, Manambato (Anove), 1 ♂ (Inst. Sci. Madag.) ; Andobo, Antsingy Forest, Antsalova, 190 m., 1 ♀, ii (Inst. Sci. Madag.) ; Farafangana, Midongy, 600-1,000 m., 1 ♀, viii (Mus. Hist. Nat. Paris) ; Analalava, Maromandia, 1 ♂, 1 ♀, iii (Mus. Hist. Nat. Paris) ; Andampy Forest, 60 Km. S.W. of Vohemar, 1 ♂ (Mus. Hist. Nat. Paris) ; Forest of Ambre and Maevatanana, 1 ♂ (Mus. Hist. Nat. Paris) ; Ambovombe, 3 ♂, 3 ♀ (Mus. Hist. Nat. Paris) ; Ampasindava Bay, 1 ♀, xi (Mus. Hist. Nat. Paris) ; Ankazoabo, 1 ♀ (Mus. Hist. Nat. Paris) ; Ivondro, 1 ♀, vii (Mus. Hist. Nat. Paris) ; Nosy-Komba, 1 ♀, v (Inst. Sci. Madag.) ; Tsivory, 1 ♂, 1 ♀ (Mus. Hist. Nat. Paris) ; Fainarantsoa, Ranomafana, 1 ♂, i (Nat. Mus. Basle) ; Tamatave, Soanierana-Ivongo, 1 ♀, xi (Nat. Mus. Basle) ; Tamatave, Antanambe, 1 ♂, xi (Nat. Mus. Basle) ; Tamatave, Moramanga, 1 ♂, xii (Nat. Mus. Basle) ; Ambohimombo Forest, 1 ♀, xi ; Ambinanindrano, 1 ♂ (Univ. Mus. Oxford) ; Antongil, 2 ♂ (Nat. Mus. Vienna) ; Andrangoloka, 1 ♂ (Nat. Mus. Vienna) ; Ampandrandave, 10 ♂, 2 ♀, xii-i (Inst. Esp. Ent.) ; Sakavondro, Fort Dauphin, 40 m., 1 ♀, vi (Inst. Sci. Madag.) ; Lake Iotry, Morombe, 40 m., 1 ♂, 1 ♀, vii (Inst. Sci. Madag.) ; Ankadimanga, Menjakandriana, 1 ♂, xii (Inst. Sci. Madag.) ;

Tananarive, Ambohitantely, 1 ♀, xi (Nat. Mus. Basle); Tananarive, 1 ♂, 2 ♀, x-xii (Cal. Acad. Sci.); Tananarive, 1 ♂ (Mus. Hist. Nat. Paris).

Small Madagascan form (see p. 310). MADAGASCAR: Soaindrana Plateau, Andringitra-Ambalavao, 2,090 m., 9 ♂, 7 ♀, i (Inst. Sci. Madag.); Vakoana Forest, Ambalamarovandana, Andringitra-Ambalavao, 1,530 m., 1 ♂, 1 ♀, i (Inst. Sci. Madag.); Amboasary, Ambovombe, 220 m., 1 ♂, vi (Inst. Sci. Madag.); Andran-goloka, 5 ♂, 1 ♀ (Nat. Mus. Vienna).

In Brit. Mus. (Nat. Hist.) unless otherwise stated.

DISTRIBUTION. The range of this species covers most of Africa south of the equator (though it is not yet known from South West Africa or Bechuanaland), and Madagascar.

### 5. *Tylopsis fissa* sp. n. (Text-figs. 6, 15, 28, 43)

DIAGNOSIS. ♂ ♀. Lateral pronotal lobes as in Text-fig. 28. Male cerci as in Text-fig. 6. Female subgenital plate as in Text-fig. 43, with deep median incision at apex.

DESCRIPTION. ♂. Fastigium of vertex compressed, sulcate above, concave in profile, with narrow anterior point.

Pronotum without lateral carinae, lateral lobes shaped as in Text-fig. 28. Fore coxae with well-developed spine. Fore tibiae with about 5-8 external ventral spurs. Mid tibiae with about 11-15 external ventral spurs. Hind femora unarmed. Hind tibiae with about 25-40 external dorsal spines. Hind wings extending beyond fore wings by about third length of latter.

Tenth abdominal tergite unmodified. Supra-anal plate triangular. Cerci as in Text-fig. 6. Subgenital plate with median apical incision.

General coloration usually green, sometimes with red-brown spots on top of head, pronotum and hind femora, and on abdominal tergites; antennae, tibiae and hind femora red-brown or with red-brown markings; tibial spines and spurs with dark tip; fore wings with red-brown band along anterior and posterior margins, and blackish spot at base of *C*; left fore wing with blackish spot on stridulatory rib (*Cu<sub>2</sub>*); cerci with dark tip. Occasionally all brown, in which case there is usually dark median stripe on pronotal disc and dark spots on fore wings, especially in radial area.

♀. As male except for fore wings and genitalia. Subgenital plate as in Text-fig. 43, with deep median incision at apex. Red-brown markings of green variety often much less in evidence than in male, and sometimes absent.

#### MEASUREMENTS.

	MALES	FEMALES
Total length	(20) : 34.9-42.9, mean 39.44	(20) : 32.6-42.8, mean 38.28
Median length of pronotum	(20) : 3.5-3.9, mean 3.67	(20) : 3.4-4.0, mean 3.71
Length of hind femur	(20) : 20.1-23.9, mean 21.84	(20) : 20.3-25.4, mean 22.76
Length of fore wing	(20) : 24.1-29.4, mean 27.07	(20) : 22.9-30.0, mean 26.52
Length of ovipositor		(20) : 5.5-7.7, mean 6.15

VARIATION. The lateral pronotal lobes vary a little in shape. There is variation in the number of tibial spines and spurs, especially the dorsal spines of the hind tibiae. The relative length of the fore wings varies appreciably, some of the Congolese specimens having noticeably shorter wings than usual; there is similar variation in the relative length of the legs and, in the female, of the ovipositor.

DISCUSSION. The nature of the female subgenital plate, with its deep median split, is unique in the genus. The male is less easily recognized, but may be distinguished from the males of the other East African species by the shape of the cerci and lateral pronotal lobes, taken in combination; the small blackish spot on the stridulatory rib of the left fore wing is also quite characteristic, though this feature is often also shown by the Madagascan form of *T. bilineolata* (Serville).

*T. fissa* sp. n. seems to be the most common species of the genus in Uganda, Ruanda, Urundi, and the extreme east of the Congo Republic, though *T. irregularis* Karsh occurs more sparsely in all these areas.

#### MATERIAL EXAMINED.

Holotype. UGANDA: Entebbe, ♂, 9.viii.1911 (*Gowdey*).

Paratypes. UGANDA: Entebbe, 2 ♂, 4 ♀, 19–26.viii.1911 (*Gowdey*); Entebbe, 1 ♂, 12.vi.1913 (*Gowdey*); Entebbe, 1 ♂, 1 ♀, 15–22.vi.1912 (*Gowdey*); Entebbe, 1 ♂, 13–17.i.1913 (*Gowdey*); Entebbe, 1 ♂, 15.xi.1910 (*Gowdey*); Entebbe, 1 ♂, 2 ♀ (*Gowdey*); Entebbe, 1 ♀, 28.vii.1933 (*Johnston*); Manataba Forest, 1 ♂, 9.ix.1933 (*Johnston*); Kampala, 1 ♂, 21.ii.1933 (*Johnston*); Kampala, 1 ♂, 20.iii.1933 (*Johnston*); Kampala, 1 ♀, 10.vii.1927 (*Hargreaves*); Kigezi, Kashenji, 7,000 ft., hill scrub, 1 ♂, xi.1935 (*Johnston*); Kakumiro, 1 ♂, 16.x.1933 (*Buxton*); Lango, Aduku, at light, 1 ♀, 1.vii.1934 (*Johnston*); Beedongo, 1 ♀, 3.iii.1910 (*Gowdey*); Lwengo, Buddu, at light, 1 ♂, 18.vii.1935 (*Johnston*); Kisaru, at light, 1 ♀, 22.vi.1933 (*Johnston*); Hoima, 1 ♀, vi.1933 (*Johnston*); Lwanda, Koki, at light, 1 ♂, 15.v.1935 (*Johnston*); Lango, Teriri to Dokolo, seasonal swamps, 1 ♂, 24–25.vii.1935 (*Johnston*); Banda, Chagwe, 1 ♀, 28–29.iii.1913 (*Gowdey*); Kidongole, 1 ♀, 3.xii.1910 (*Gowdey*); Kepeka, 1 ♀, 6.vii.1933 (*Johnston*); Bulemezi, Nakasongola, seasonal swamp, dry season, rough tuft grass, 1 ♀, 6.xi.1935 (*Johnston*); Lango, Kigaa (Agaya), short grass-bush, 1 ♀, i.1933 (*Johnston*); Bwamba, 1 ♂, iii.1948 (*van Someren*); Bukalassa, 1 ♂, 1906 (*Oberthur*) (Mus. Hist. Nat. Paris); ———, 1 ♂ (*Bayon*) (Mus. Stor. Nat. Genoa); Bousoubizi, 1 ♀, xii.1909 (*Alluaud*) (Inst. Esp. Ent.); Toro, 1 ♀, 1909 (*Alluaud*) (Inst. Esp. Ent.); Ounyoro, nr. Hoima, 1 ♂, ii.1909 (*Alluaud*) (Inst. Esp. Ent.); Ounyoro, E. Lake Albert, 1 ♂, 1909 (*Alluaud*) (Inst. Esp. Ent.); Ounyoro, S.E. Lake Albert, R. Mousisi, 1 ♂, 1909 (*Alluaud*) (Inst. Esp. Ent.); Kampala, 1 ♂ (*Carl*) (Inst. Esp. Ent.); Busu Hill, Busoga, 1 ♂, 2 ♀ (*Carl*) (Inst. Esp. Ent.); N. of Lake Edward, 1 ♀ (*Gyldenstolpe*) (Nat. Riksmus. Stockholm); SUDAN: Imatong Mtns., Lomuleng, 8,000 ft., 1 ♂, 1 ♀, ii.1936 (*Johnston*); Imatong Mtns., Loyaru, 6,700 ft., 1 ♂, ii.1936 (*Johnston*); Imatong Mtns., 1 ♂, 1 ♀, ii.1936 (*Johnston*); KENYA: Gelegele R., 1 ♂, vi.1913 (*Luckman*); Mt. Elgon, 2,500 m., 1 ♂, 10.iii.1926 (*Granvik*) (Zool. Inst. Lund); CONGO REPUBLIC: Ituri, Nioka, 2 ♂, xi.1934 (*Brédo*) (Mus. Af. Cent.); Ituri, Nioka, 1 ♀, 20.i.1934 (*Leroy*) (Mus. Af. Cent.); Ituri, Lubero, 1 ♀, 1928 (*Van Riel*) (Mus. Af. Cent.); Ituri, Butembo, 1 ♀, xii.1928 (*Van Riel*) (Mus. Af. Cent.); Djugu, Ituri Forest, clear spaces in forest, 1 ♀, 6.x.1935 (*Johnston*); Kivu, Goma, 1 ♂, 10.ii.1937 (*Brédo*) (Mus. Af. Cent.); Kivu, Kibati, Masisi, 1 ♀, 7.x.1949 (*Laurent*) (Mus. Af. Cent.); Lake Kivu, N'Gwese, 1 ♂ (*Carlier*) (Mus. Af. Cent.); Ruwenzori, Kalonge (Monongo), 1 ♂, vii.1937 (*Brédo*) (Mus. Af. Cent.); Mabende, between Beni

and Rutshuru, 2,400 m., 1 ♂, xii.1935 (*Brédo*) (Mus. Af. Cent.); Rutshuru, 1 ♀, 8.v.1936 (*Lippens*) (Mus. Af. Cent.); Mahagi-Niareembe, 1 ♂, xi.1935 (*Scops*) (Mus. Af. Cent.); Kibali-Ituri, Demu, 2 ♂, 3 ♀, ii-iii.1936 (*Pasteels*) (Mus. Af. Cent.); Kibali-Ituri, Kilomines, 3 ♂, 11.i.1957 (*Smoor*) (Mus. Af. Cent.); Volcan Sabinjo, Bunagana, 1 ♂, 1935 (*Brédo*) (Mus. Af. Cent.); Mulungu, 1 ♀, 1949 (*Hendrickx*) (Mus. Af. Cent.); Aru, dry *Acacia* bush, 1 ♂, iii.1936 (*Brédo*); Lado, 1,100 m., 1 ♂, x.1903 (*du Bourg de Bozas*) (Mus. Hist. Nat. Paris); RUANDA: Kibungu, 3 ♀, x-xii.1937 (*Verhulst*) (Mus. Af. Cent.); Kigali, 1 ♂, vi-vii.1933 (*Becquet*) (Mus. Af. Cent.); Dendezi, 1 ♂, xi.1924 (*Colbach*) (Mus. Af. Cent.); URUNDI: Kanyinya, 1,500 m., 1 ♀, xii.1947-i.1948 (*Dames de Marie*) (Mus. Af. Cent.).

In the Brit. Mus. (Nat. Hist.) unless otherwise stated.

**DISTRIBUTION.** This species is known from Uganda, the extreme south of Sudan, western Kenya, and the highlands associated with the Albert-Edward-Kivu rift-valley. It doubtless also occurs in north-western Tanganyika.

### 6. *Tylopsis brevis* sp. n.

(Text-figs. 7, 14, 16, 29, 44)

**DIAGNOSIS.** ♂ ♀. Fore wings comparatively short and broad, with strongly convex anterior margin, as in Text-fig. 14. Dorsal spines of hind tibiae mostly large and widely spaced, as in Text-fig. 16. Lateral pronotal lobes as in Text-fig. 29. Male cerci as in Text-fig. 7. Female subgenital plate as in Text-fig. 44.

**DESCRIPTION.** ♂. Fastigium of vertex compressed, sulcate above, concave in profile.

Pronotum without lateral carinae, though showing slight tendency towards their formation; lateral lobes shaped as in Text-fig. 29. Fore coxae with well-developed spine. Fore tibiae with about 5-8 external ventral spurs. Mid tibiae with about 9-11 external ventral spurs. Hind femora unarmed; terminal lateral lobes particularly elongate. Hind tibiae with about 15-30 external dorsal spines, mostly large and widely spaced. Fore wings comparatively short and broad, with strongly convex anterior margin, as in Text-fig. 14. Hind wings extending beyond fore wings by about quarter length of latter.

Tenth abdominal tergite unmodified. Supra-anal plate triangular. Cerci as in Text-fig. 7. Subgenital plate with median apical incision.

General coloration green, with few dark brown spots on fore wings and blackish spot at base of C. Tibial spines and spurs with dark tip. Stridulatory region of left fore wing with conspicuous dark brown markings. Cerci with dark tip.

♀. As male except for fore wings and genitalia. Subgenital plate as in Text-fig. 44.

#### MEASUREMENTS.

	MALES	FEMALE
Total length	(3) : 32.9-37.3, mean 34.50	35.8
Median length of pronotum	(4) : 3.6- 3.9, mean 3.71	3.7
Length of hind femur	(3) : 18.9-20.4, mean 19.63	20.4
Length of fore wing	(3) : 21.2-24.6, mean 22.57	22.9
Length of ovipositor		5.2

**VARIATION.** There is variation in the number of tibial spurs. The dorsal spines of the hind tibiae vary considerably in number and may or may not be interspersed with a few much shorter spines. There is considerable variation in the relative length of the fore wings.

DISCUSSION. The relatively short fore wings, with the strongly convex anterior margin, are unique in the genus. The shape of the subgenital plate of the single female available is also characteristic.

MATERIAL EXAMINED.

Holotype. CONGO REPUBLIC : Volcan Nyamlagira, ♂, 5.i.1936 (*Brédo*) (Mus. Af. Cent.).

Paratypes. CONGO REPUBLIC : Kivu, Kapanga, 1 ♂, 1952 (*Froidebise*) (Mus. Af. Cent.) ; Kivu, Masisi, 1 ♂, 1938 (*Le Moult*) (Zool. Inst. Lund) ; Rwindi, S. shore of Lake Edward, 1 ♂, 21.ix.1957 (*Ross & Leech*) (Cal. Acad. Sci.).

Also examined were a male paratype with the data " N.W. Tanganyika, Grauer, 1910 ", and a female paratype with the data " Urw. hint. d. Randbg. d. N.W. Tanganyika-S. 18-2200 m. Grauer ". It seems very likely that the second of these specimens (and possibly also the first) was collected in Urundi, while this territory was part of German East Africa ; there are no mountains reaching a height of 1,800 m. in the north-western part of present-day Tanganyika. These two specimens are in the Naturhistorisches Museum, Vienna.

DISTRIBUTION. This species is known only from a small area of Central Africa in the vicinity of Lake Edward, Lake Kivu and the northern end of Lake Tanganyika.

7. *Tylopsis ampla* sp. n.

(Text-figs. 8, 30, 45-46)

DIAGNOSIS. ♂ ♀. Lateral pronotal lobes as in Text-fig. 30. Male cerci as in Text-fig. 8, with marked concavity on outer side near apex. Female subgenital plate with lateral lobes, as in Text-figs. 45 and 46.

DESCRIPTION. ♂. Fastigium of vertex compressed, sulcate above, concave in profile, with narrow anterior point.

Pronotum without lateral carinae ; lateral lobes shaped as in Text-fig. 30. Fore coxae with well-developed spine. Fore tibiae with about 6-10 external ventral spurs. Mid tibiae with about 13-15 external ventral spurs. Hind femora unarmed. Hind tibiae with about 35-55 external dorsal spines. Hind wings extending beyond fore wings by between quarter and third length of latter.

Tenth abdominal tergite unmodified or somewhat emarginate medially. Supra-anal plate triangular. Cerci as in Text-fig. 8, with marked concavity on outer side near apex. Subgenital plate with median apical incision.

General coloration brown or green, usually with red-brown spots over most of body and legs and with few dark brown spots on fore wings. Lateral pronotal lobes usually with small blackish posteroventral spot. Tibial spines and spurs with dark tip. Fore wings with blackish spot at base of C. Stridulatory region of left fore wing with dark brown markings. Cerci with dark tip.

♀. As male except for fore wings and genitalia. Subgenital plate with lateral lobes, as in Text-figs. 45 and 46.

MEASUREMENTS.

	MALES	FEMALES
Total length	(20) : 44.0-48.7, mean 46.42	(18) : 43.2-50.2, mean 47.04
Median length of pronotum	(20) : 3.6- 4.5, mean 4.03	(19) : 3.7- 4.7, mean 4.06
Length of hind femur	(20) : 25.3-30.0, mean 27.72	(15) : 25.9-30.8, mean 28.19
Length of fore wing	(20) : 30.4-33.9, mean 31.89	(18) : 29.3-35.0, mean 33.09
Length of ovipositor		(19) : 5.7- 7.2, mean 6.30

**VARIATION.** The pronotum varies a little in shape, sometimes showing a tendency to form an anteroventral angle. There is variation in the number of tibial spines and spurs. The degree of development of the lateral lobes of the female subgenital plate varies somewhat.

**DISCUSSION.** The male of this species may be easily recognized by the shape of the cerci, and the female by the relatively deep lateral pronotal lobes and the shape of the subgenital plate. *T. ampla* sp. n. is more robustly built than most species of the genus, though sometimes equalled in this respect by *T. continua* (Walker).

**MATERIAL EXAMINED.**

Holotype. ANGOLA : Moxico distr., upper Mu-Simój R., ♂, 20-23.ix.1927 (*Burr*).  
 Paratypes. ANGOLA : Moxico distr., upper Mu-Simój R., 7 ♂, 7 ♀, 20-23.ix.1927 (*Burr*) ; Moxico distr., upper Mu-Simój R., 2 ♂, 2 ♀, 24-25.ix.1927 (*Burr*) ; Moxico distr., valley of R. Mu-Simój, 1 ♂, 1 ♀, 25.x.1927 (*Burr*) ; Moxico distr., upper Mu-Simój R., 3 ♂, 5 ♀, 27.ix.1927 (*Burr*) ; Moxico distr., upper Mu-Simój R., 1 ♂, 20-27.ix.1927 (*Burr*) ; Moxico distr., upper Mu-Simój R., 1 ♂, 1 ♀, 20.ix.1927 (*Burr*) ; Moxico distr., R. Lungue Bungu, 1 ♀, 3.x.1927 (*Burr*) ; Luchase distr., R. Quangu, 5,000 ft., 1 ♂, 14-15.x.1927 (*Burr*) ; Posto de Caungula, Zovo, Mabete, 8° 03' S., 18° 13' E., 750 m., banks of R. Cambonde, 2 ♂, 18-20.vii.1962 (*Machado*) (Mus. Dundo) ; Caluango, R. Caquele, 8° 20' S., 19° 53' E., 1 ♂, 6.ix.1961 (*Carvalho*) (Mus. Dundo) ; Huambo, 1 ♂, x.1934 (*Pimentel*) ; CONGO REPUBLIC : Katanga, Kolwezi, at light, 1 ♂, 9.x.1953 (*Gilbert*) (Mus. Af. Cent.) ; Katanga, Kafakumba, 1 ♀, ix.1924 (*Overlaet*) (Mus. Af. Cent.) ; Katanga, Kasompi, nr. Jadotville, 1 ♀, x.1956 (*Marlier, Laurent & Neleup*) (Mus. Af. Cent.) ; Elisabethville, 1 ♂, 2 ♀, x-xi.1911 (*Miss. Agric.*) (Mus. Af. Cent.) ; Elisabethville, 1 ♂, 5.xi.1923 (*Seydel*) (Mus. Af. Cent.) ; Elisabethville, 1 ♂, x.1934 (*Seydel*) (Mus. Af. Cent.) ; Lulua, Luashi, 1 ♂, 1936 (*Freyne*) (Mus. Af. Cent.) ; NORTHERN RHODESIA : Congo Border, Shinsenda, 1 ♀, 6.xi.1928 (*Silvester Evans*) ; Chisinga Plateau, Kalungwisi distr., 4,500 ft., 1 ♀, 17.ix.1908 (*Neave*) (Univ. Mus. Oxford).

In the Brit. Mus. (Nat. Hist.) unless otherwise stated.

**DISTRIBUTION.** So far known only from Angola, Northern Rhodesia and the southern part of the Congo Republic.

8. *Tylopsis continua* (Walker, 1869)

(Text-figs. 9-11, 31, 47-48, 50-52)

*Phaneroptera continua* Walker, 1869 : 337. Lectotype ♂, SOUTH AFRICA : Durban (Brit. Mus. (Nat. Hist.)) [examined].

*Phaneroptera vicaria* Walker, 1869 : 338. Holotype ♂, SOUTH AFRICA : Durban (Brit. Mus. (Nat. Hist.)) [examined].

*Tylopsis longipennis* Stål, 1876 : 58. Holotype ♂, SOUTH WEST AFRICA : Damara (Nat. Riksmus. Stockholm) [examined].

*Tylopsis vittata* Brunner, 1878 : 229. Lectotype ♂, SOUTH AFRICA : Durban (Nat. Mus. Vienna) [examined].

*Tylopsis inhamata* Karsch, 1888 : 453. Lectotype ♂, MOZAMBIQUE : Delagoa Bay (Zool. Mus. Berlin) [examined].

DIAGNOSIS. ♂ ♀. Lateral pronotal lobes as in Text-fig. 31. Male cerci as in Text-figs. 9–11, not attenuate at apex. Female subgenital plate as in Text-figs. 47 and 48, triangular. Pronotum usually with dark brown or red-brown dorsal stripe, and with dark brown ventro-lateral spot on lateral lobes.

MEASUREMENTS.

	MALES	FEMALES
Total length	(20) : 33·0–48·4, mean 40·74	(20) : 30·5–46·3, mean 40·01
Median length of pronotum	(20) : 3·1– 4·7, mean 3·83	(20) : 3·2– 4·6, mean 3·86
Length of hind femur	(20) : 18·4–28·9, mean 25·17	(20) : 18·9–30·4, mean 25·70
Length of fore wing	(20) : 22·0–34·8, mean 28·38	(20) : 23·5–31·6, mean 28·20
Length of ovipositor		(20) : 5·2–10·9, mean 7·45

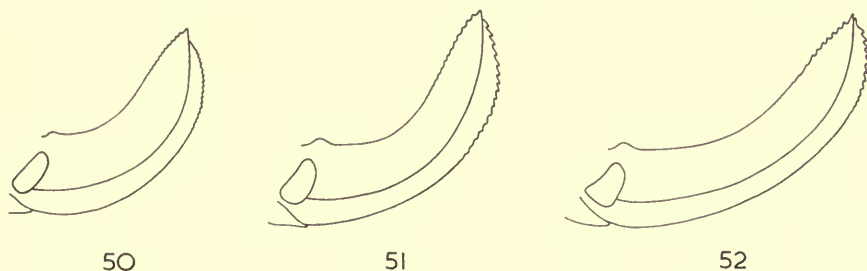
Brachypterous form (see below)

	MALES	FEMALES
Total length	(3) : 27·9–31·7, mean 30·33	(2) : 27·3–27·4, mean 27·35
Median length of pronotum	(3) : 3·6– 3·8, mean 3·74	(2) : 3·8– 4·0, mean 3·90
Length of hind femur	(3) : 21·5–23·2, mean 22·13	(1) : 23·8
Length of fore wing	(3) : 19·8–22·0, mean 21·03	(2) : 20·5–21·0, mean 20·75
Length of ovipositor		(2) : 9·5– 9·8, mean 9·65

DISCUSSION. The almost invariable dark brown or red-brown colour of the pronotal disc (occasionally restricted to a narrow median stripe and rarely absent) enables this species to be readily distinguished from all the other species of the genus except *T. rubrescens* Kirby and *T. gracilis* Chopard ; when this dark colouring is not developed the male may be recognized by the shape of the cerci, and the female by the shape of the subgenital plate and the basal plates of the ovipositor. *T. continua* (Walker) may be easily distinguished from *T. gracilis* Chopard by its much larger size, and from *T. rubrescens* Kirby by the male cerci, which are not or hardly bent upwards near the apex, and the basal plates of the ovipositor, which lack a postero-ventral lobe ; the three species also differ in the shape of the lateral pronotal lobes (cf. Text-figs. 31–33).

The ovipositor of this species shows considerable variation in size : it is usually relatively larger than in the other species of *Tylopsis* Fieber and in some of the South African specimens examined it was extremely large (see Text-figs. 50–52). This may be an indication that sibling species are involved, but this question cannot be settled until more material is available.

Three of the Southern Rhodesian males examined, and one male and two females



FIGS. 50–52. Lateral view of the ovipositor of *Tylopsis continua* (Walker) from (50) Southern Rhodesia ; (51) Tanganyika ; (52) Zululand.

from the Transvaal, had considerably shorter wings than usual. These specimens appeared to differ in no other respect from typical members of the present species, however, and I am regarding them as representing a brachypterous form of *T. continua* (Walker).

I have selected and labelled a male lectotype from each of the following type-series :—

*T. continua* (Walker), 4 ♂ and 1 ♀ syntypes

*T. vittata* Brunner, 4 ♂ and 1 ♀ syntypes

*T. inhamata* Karsch, 3 ♂ and 3 ♀ syntypes.

#### MATERIAL EXAMINED.

Lectotype. SOUTH AFRICA : Durban, ♂.

Paralectotypes. SOUTH AFRICA : Durban, 1 ♀ ; ———, 3 ♂.

TANGANYIKA : Old Shinyanga, Boma, 2 ♂, ii–iv ; Dar-es-Salaam, 1 ♀, v ; Old Shinyanga, 1 ♂, v ; NORTHERN RHODESIA : Mporokoso distr., Mweru Wa Ntipa, 5 ♂, 1 ♀, vii ; Kienge, 1 ♀, i (Mus. Af. Cent.) ; Kipundu, 1 ♀, i (Mus. Af. Cent.) ; Abercorn, Kalambo, 1 ♀, iii ; nr. Chilangozi Game Camp, 1 ♀, vi ; Fort Jameson distr., 13° 21' S., 30° 40' E., 1 ♀, vii ; Luano Valley, Chisorwe, 5 ♂, 8 ♀, i–iv ; Luano Valley, Kabulu, 1 ♂, iv ; SOUTHERN RHODESIA : Salisbury, Queque, 1 ♂ (S. A. Mus.) ; Mashonaland, Salisbury, 5,000 ft., 1 ♀, iii (Univ. Mus. Oxford) ; M., Umtali, 3,700 ft., 1 ♂ (Inst. Esp. Ent.) ; M., Salisbury, 1 ♂, iii ; Hatfield, Salisbury, 2 ♂, i–iii ; Saw Mills, 1 ♂, ii (Nat. Mus. S. R.) ; Zimbabwe, 1,100 m., 1 ♂, iii (Cal. Acad. Sci.) ; Bulawayo, 1 ♂, iv ; Zimbabwe, 1,100 m., 1 ♂, iii (Cal. Acad. Sci.) ; Bulawayo, 1 ♂, iv ; Matopas Experimental Station, nr. Bulawayo, 1 ♀, ii ; NYASALAND : Fort Johnston, 1 ♀ ; Lujere, Mlanje, 1 ♂, xii (Nat. Mus. S. R.) ; Mt. Mlanje, 2 ♂, xii ; 13 miles S.E. of Fort Hill, 1,300 m., 1 ♂, ii (Cal. Acad. Sci.) ; W. shore of Lake Nyasa, 1 ♂, v ; Zomba, 2,000–3,000 ft., 1 ♂, 1 ♀, ix ; MOZAMBIQUE : Inhaca I., 1 ♀, ix (Transvaal Mus.) ; Gorongosa, Sungoue, 40 m., 1 ♀ (Mus. Hist. Nat. Paris) ; Delagoa Bay, 1 ♂, i (S. A. Mus.) ; Delagoa Bay, 3 ♂, 3 ♀ (*Monteiro*) (Zool. Mus. Berlin) (lectotype and paralectotypes of *T. inhamata* Karsch) ; ANGOLA : Amboim, 1 ♂, iv ; SOUTH WEST AFRICA : Nuragas, 1 ♀, i (S. A. Mus.) ; Damara, 1 ♂ (*De Vyllder*) (Nat. Riksmus. Stockholm) (holotype of *T. longipennis* Stål) ; Ovamboland, Odongua, 1 ♂, i (S. A. Mus.) ; SOUTH AFRICA : Transvaal, Masina, 1 ♂, v ; T., Drakensberg Mtns., 12 miles W. of Klaserie, 1,275 m., 1 ♂, iii (Cal. Acad. Sci.) ; T., 15 miles W. of Pongola, 550 m., 1 ♂, iv (Cal. Acad. Sci.) ; T., Gwaliweni, Ingwavuma distr., 1 ♂, 3 ♀, iv (Transvaal Mus.) ; Louws creek, 1 ♂, iii (Transvaal Mus.) ; Port. St. Johns, 1 ♂, ii (Transvaal Mus.) ; Skukusa, 1 ♂, iii (Transvaal Mus.) ; Bruk. R., 1 ♂, x (Transvaal Mus.) ; Wonderboom, 1 ♂, ii (Transvaal Mus.) ; Mt. Selinda, 1 ♂, iv (Transvaal Mus.) ; Pretoria, 1 ♂, 1 ♀, ii–iv (Transvaal Mus.) ; Clearwaters, Woodbush, 1 ♂, xii (Transvaal Mus.) ; Rooiplaat, 1 ♂, iii (Transvaal Mus.) ; Hondeklip Bay, 1 ♂, xi (Transvaal Mus.) ; Camperdown, 1 ♂, iv (Transvaal Mus.) ; Groenkloot, 1 ♀, viii (Transvaal Mus.) ; Pretorius Kop, 1 ♂, iii (Transvaal Mus.) ; Minastune, 1 ♂, xii (Transvaal Mus.) ; Natal, Tugela R., 19 miles N. of Kranskop, 450 m., 1 ♂, iv (Cal. Acad. Sci.) ; N., Weenen, 2 ♂, 1 ♀ ; N., Durban, 6 ♂,



3 ♀ (including holotype of *Phaneroptera vicaria* Walker, and lectotype and paralectotypes of *T. vittata* Brunner (Nat. Mus. Vienna) ; Ladysmith, 1 ♀ (Inst. Esp. Ent.) ; Zululand, Hudley, 1 ♀, xi-xii (Transvaal Mus.) ; Z., Nagana Res. Lab., 2 ♂, 2 ♀ ; Z., Mlumluwe, 2,000 ft., 1 ♀, iv ; Z., 1 ♂ ; Swaziland, 1 ♀ (S. A. Mus.) ; Cape Province, Somerset West, 6 ♂, xii-i (Nat. Mus. S. R.) ; C.P., Kirstenbosch, 1 ♀, xi ; C.P., Vryburg, 1 ♂, i-ii (S. A. Mus.) ; C.P., Murraysburg distr., 1 ♂, 1 ♀, iii (S. A. Mus.).

Brachypterous form (see p. 317). SOUTHERN RHODESIA : Inyanga, 7,000 ft., 2 ♂, ii (Nat. Mus. S. R.) ; Macheke, 1 ♂, ii (Nat. Mus. S. R.) ; SOUTH AFRICA : Transvaal, Mariepskop, 1 ♂, 2 ♀, i (Transvaal Mus.).

In Brit. Mus. (Nat. Hist.) unless otherwise stated.

DISTRIBUTION. This species is widely distributed in southern Africa, its range extending southwards to the coast of Cape Province. The northernmost records are from Old Shinyanga (Tanganyika) in East Africa and Amboim (Angola) on the western side of the continent.

9. *Tylopsis rubrescens* Kirby, 1900  
(Text-figs. 12, 32, 49)

*Tylopsis rubrescens* Kirby, 1900 : 216. Holotype ♂, NYASALAND : Zomba (Brit. Mus. (Nat. Hist.)) [examined].

*Tylopsis punctulata* Kirby, 1900 : 216. Lectotype ♂, NYASALAND : Zomba (Brit. Mus. (Nat. Hist.)) [examined]. **Syn. n.**

*Tylopsis meruensis* Sjöstedt, 1909 : 134. Lectotype ♂, TANGANYIKA : Mt. Meru (Nat. Riksmus. Stockholm) [examined]. **Syn. n.**

*Tylopsis confluens* Karny, 1915 : 124. Holotype ♀, GUINEA : Upper Niger (Nat. Mus. Vienna) [examined]. **Syn. n.**

DIAGNOSIS. ♂ ♀. Lateral pronotal lobes as in Text-fig. 32. Male cerci as in Text-fig. 12, bent upwards near apex. Female subgenital plate as in Text-fig. 49, triangular. Pronotum with dark brown or red-brown dorsal stripe ; lateral lobes without dark brown ventrolateral spot. Basal plates of ovipositor with posteroventral lobe, as in Text-fig. 49.

MEASUREMENTS.

	MALES	FEMALES
Total length	(20) : 37·6-51·5, mean 43·15	(18) : 40·1-47·3, mean 44·31
Median length of pronotum	(20) : 3·3-4·5, mean 3·80	(20) : 3·6-4·3, mean 3·94
Length of hind femur	(20) : 22·5-28·8, mean 25·95	(19) : 25·0-30·7, mean 27·27
Length of fore wing	(20) : 26·4-35·6, mean 30·26	(20) : 28·2-36·2, mean 31·65
Length of ovipositor		(19) : 5·2-6·4, mean 5·69

DISCUSSION. The dark brown or red-brown colour of the pronotal disc enables this species to be easily separated from all the other species of the genus except *T. continua* (Walker) and *T. gracilis* Chopard. It may be readily distinguished from *T. gracilis* Chopard by its much larger size, and from *T. continua* (Walker) by the shape of the male cerci, which are bent upwards near the apex, and the posteroventral lobe on the basal plates of the ovipositor ; the three species also differ in the shape of the lateral pronotal lobes (cf. Text-figs. 31-33).

*T. rubrescens* Kirby is almost as widespread in Africa as *T. irregularis* Karsch,

though both the northern and southern limits of its known range are rather more southerly.

Although agreeing well enough with the present species in most characters of diagnostic importance for me to regard them as conspecific with its holotype, the three specimens forming the type-series of *T. punctulata* Kirby are rather atypical in some respects: the fore wings are unusually broad, for example, and the coloration is rather unusual. Acting as first reviser I have therefore chosen to give priority to the name *T. rubrescens* Kirby, over which *T. punctulata* Kirby has position precedence in the original publication. This course will minimize the nomenclatural adjustments that would be necessary if *T. punctulata* Kirby should be later regarded as a distinct species.

Examination of the type-specimens of *T. meruensis* Sjöstedt and *T. confluens* Karny has shown that they are conspecific with the holotype of *T. rubrescens* Kirby.

I have selected and labelled a male lectotype from the following type-series:—

*T. punctulata* Kirby, 2 ♂ and 1 ♀ syntypes

*T. meruensis* Sjöstedt, 1 ♂ and 1 ♀ syntypes.

#### MATERIAL EXAMINED.

Holotype. NYASALAND: Zomba, ♂ (*Rendall*).

GUINEA: Upper Niger, 1 ♂, 1911 (*Klapfoc*) (Nat. Mus. Vienna) (holotype of *T. confluens* Karny); DAHOMEY: Atakora, 600–700 m., 1 ♂, vi (I.F.A.N. Dakar); NIGERIA: Niger Province, Minna, 1 ♂, 2 ♀, viii–i; N.P., Diko, 1 ♀, xii; CONGO REPUBLIC: Tanganika, M'Pala, 1 ♂, vii (Mus. Af. Cent.); 4 miles S. of Sampwe, 980 m., 1 ♂, i (Cal. Acad. Sci.); RUANDA: Kagera, Gahinga, 1 ♀, iv (Mus. Af. Cent.); URUNDI: Kanyinya, 2 ♀, vii (Mus. Af. Cent.); Kanyinya, 1,500 m., 1 ♂, vi–xii (Mus. Af. Cent.); UGANDA: Mbarara, 1 ♂, i; KENYA: Moyale, 1 ♂, xii; Kikueni R., 1 ♀; Wandanyi, 5,000 ft., 1 ♀, iii; Chyulu Hills, 3,000 ft., 1 ♂, vii; TANGANYIKA: Mt. Meru, 1 ♂, 1 ♀ (*Sjöstedt*) (Nat. Riksmus. Stockholm) (lectotype and paralectotype of *T. meruensis* Sjöstedt); Lulanguru, 1 ♂, xii; Kilimanjaro, New Moshi, 800 m., 1 ♀, iv (Inst. Esp. Ent.); W. shore of Lake Manyara, 1 ♀, ii–v; Old Shinyanga, Boma, 1 ♀, ii; Meru, 7,000–8,000 ft., 1 ♂, i; Milepa Plain, 2 ♂, ii; Rukwa Valley, 1 ♂, 1 ♀, v; Morogoro, 1 ♂; Tindigo, 1 ♀, vi; NORTHERN RHODESIA: N. of Lusaka, 1 ♂, vi; Luano Valley, Chisorwe, 2 ♂, i–ii; Fort Jameson, 2 ♂ (Nat. Mus. S. R.); Abercorn, 1 ♂, i; E. Loangwa distr., Petauke, 2,400 ft., 1 ♂, xii (Univ. Mus. Oxford); SOUTHERN RHODESIA: Mashonaland, Umtali, 3,700 ft., 1 ♀ (Inst. Esp. Ent.); M., Salisbury, 1 ♀ (S. A. Mus.); NYASALAND: Zomba, 2 ♂, 1 ♀ (*Rendall*) (lectotype and paralectotypes of *T. punctulata* Kirby); 19 miles N. of Kasungu, 1,100 m., 1 ♂, ii (Cal. Acad. Sci.); MOZAMBIQUE: M'tangula, 1 ♂, vi (Mus. Zool. Lisbon); ANGOLA: Huila distr., Ongueria, c. 5,500 ft., 1 ♂, vi; 24 miles S.E. of Chibia, 1 ♀, v (Cal. Acad. Sci.); BECHUANALAND: Ngamiland, 2 ♂, v; SOUTH AFRICA: Crocodile Bridge, 2 ♂, 1 ♀, iii (Transvaal Mus.).

In Brit. Mus. (Nat. Hist.) unless otherwise stated.

DISTRIBUTION. This species occurs in most of tropical Africa south of the Sahara, extending southwards into Transvaal.

10. *Tylopsis gracilis* Chopard, 1954  
(Text-figs. 13, 33)

*Tylopsis gracilis* Chopard, 1954, in Chopard & Kevan, 1954 : 328. Holotype ♂, KENYA : Mandera distr., Damassa (Brit. Mus. (Nat. Hist.)) [examined].

DIAGNOSIS. ♂. Lateral pronotal lobes as in Text-fig. 33. Cerci as in Text-fig. 13. Pronotum with dark brown dorsal stripe. Total length less than 30 mm.

♀ unknown.

MEASUREMENTS.

MALES

Total length	(3) : 25·8–27·8, mean 27·00
Median length of pronotum	(3) : 2·4–2·5, mean 2·42
Length of hind femur	(2) : 18·8–19·4, mean 19·10
Length of fore wing	(3) : 15·5–15·8, mean 15·63

DISCUSSION. This species may be easily recognized by its small size and the shape of the male cerci. The dark brown colour of the pronotal disc is found elsewhere in the genus only in *T. continua* (Walker) and *T. rubrescens* Kirby, both of which are very much larger than the present species.

MATERIAL EXAMINED.

Holotype. KENYA : Mandera distr., Damassa, 3° 09' N., 41° 20' E., desert grass and thorn-bush, ♂, 19.xii.1944 (*Kevan*).

SOMALI REPUBLIC : Danot, 2 ♂, 25.xi.1953 (*Popov*).

All in Brit. Mus. (Nat. Hist.).

DISTRIBUTION. Known only from the semi-desert area of East Africa.

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